BOTANICAL GAZETTE.

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To Botanists.—We know that it is not customary to advertise a journal in the space generally devoted to contributors, but we wish this to be not merely an advertisement, but a special address to all botanists. The Gazette has now entered upon the fourth year of its existence and has steadily grown in favor. It will appear this year in a somewhat different form, which we hope will meet the approval of all our friends. The type is larger and the number of pages increased to twelve. It has been suggested that we raise the subscription price, but we have concluded to keep it at its present rate for another year, desiring to reach as many botanists as possible. It is extremely difficult to keep in running order a journal devoted exclusively to one department of science and for this reason we call upon all botanists to lend us their aid both by subscription and the contribution of articles One dollar a year is not much for any botanist to spend upon a paper devoted to his own department, and if all the working botanists of this country would unite, they could support a first-class journal. It was with some visionary hopes that such a thing would finally grow out of it that the Gazette was undertaken, and those hopes have not yet been abandoned. We have already received cordial support from a large class of botanists and they have our hearty thanks, but we would ask one thing more of them, and that is that they try to induce their botanical acquaintances to subscribe and write for the Gazette.

We have put on a cover for the double purpose of protecting the body of the Gazette and giving us room for advertisements. and to this also we would call the attention of botanists. If any of you wish to exchange, sell or procure plants, the simplest and cheapest way is to advertise. A few lines of advertisement will thus accomplish what one or two hundred letters can not. Books, microscopes, anything pertaining to the science should be constantly presented to the eyes of working botanists.

The material of the Gazette will be just what its subscribers make it. If they promptly send us contributions, long or short, so that we can have a large amount of material to select from, we can promise

the choicest of reading. It is desirable to make the articles as varied as is possible in a single branch of science, but we have concluded not to publish bare lists of plants as not being of sufficient interest to the general reader. A large edition of this number has been sent out as a specimen number, and we hope that it will procure an immediate and favorable response from all who receive it. We can, as formerly, promise our readers contributions from the leading botanists of the country, but we want notes from the rank and file as well, for it is from them after all that our chief support must come. We press our claims upon you now with the more boldness as we have safely lived through the experimental age and have an established enterprise to call upon you to support.

PANICUM LITTORALE, *n. sp.*—Mr. Chas. Mohr has sent me from Mobile, Alabama, specimens of a *Panicum* which I can not find described. It grows among the drifting sands of the Gulf coast, having strong running rhizomas, sending up from the joints upright culms about a foot high, very leafy below, the sheaths large and loose, those of the lower joints, where covered with sand, being destitute of blade; above, the leaves are rigid, distichous, standing out at a strong angle from the culm, 3 to 4 inches long, 2 to 3 lines broad at the base and gradually narrowed to the acute point, becoming convolute, the sheaths, margins and lower surfaces sparsely hairy, the upper leaves rather distant and narrower; the panicle shortly exserted, 2 to 3 inches long, of 5 or 6 branches, single at the joints, but little branched and loosely flowered and not pubescent; the spikelets are small, about a line long, smooth, the sterile flower staminate, of 2 palets, the lower glume very short, broad, obtuse, $\frac{1}{3}$ or $\frac{1}{4}$ as long as the upper, which is ovate, pointed, 7-nerved, and about equalling the upper flower.

In habit this species seems related to *P. amarum*, Ell., though it is smaller, with shorter leaves and much smaller panicle and flowers. From its habitat Mr. Mohr suggests that this may properly be called *P. littorale*, in which I concur, as I can not find that name previously appropriated. Mr. Chas. Mohr will furnish specimens on application.—GEO. VASEY.

In the GAZETTE for December, where I spoke of *Fraxinus Curtissii* there should have been a reference to Dr. Gray's Synop. Flora N. A., page 75.—G. V.

SHORTIA GALACIFOLIA RE-DISCOVERED.—A hundred years ago the elder Michaux collected, somewhere in the mountains of North Carolina, a specimen of a Pyrolaceous-looking plant, out of flower, or rather

with corolla and stamens fallen, a dehiscent capsule enclosed in a persistent imbricated calyx and surmounted by a persistent style. It was noticed in the *Flora Boreali-Americana*, which was prepared by L. C. Richard from Michaux's collections. Early in the year 1839, I found and examined this specimen in Michaux's herbarium, and I received from the hand of M. Decaisne a drawing and some fragments of it. In a paper treating of the botany of these mountains, contributed to this Journal in January, 1842, I ventured to found a genus upon this plant, under the above name, trusting that the diligent search prosecuted by myself and by all botanists visiting the region would duly bring it to light. The protracted failure of these endeavors has thrown an air of doubt over the minds of my associates in the search, as to the actual existence of any such plant. In 1868, I had the pleasure of announcing in this Journal (Ser. II. xi, 402) the discovery of this genus, not indeed where we were looking for it, but where experience had led me to expect that any or every peculiar Atlantic States type might recur, namely in Japan. That is, I identified the genus with the *Schizocodon uniflorus* of Maximowicz, which, singularly enough, was known only by specimens in the same condition, *i. e.*, with calyx and gynœcium, but neither corolla nor stamens. The patent relationship of these specimens to *Schizocodon soldanelloides* of Zuccarini gave ground for a conjectural restoration of the missing organs; and I ventured the opinion that *Shortia* (of 1842) and *Schizocodon* (1843), whether of one genus or two, were most related to *Diapensia*. In the year 1870 (in Proc. Am. Acad., viii, 243) I reconstructed the order *Diapensiaceæ*, referred to a separate tribe, *Galacineæ*, the genera *Galax* and *Shortia*, and adopted the idea of a probable identity of *Schizocodon* with the latter. The next year Maximowicz decided that the two genera should be distinct, founding this conclusion upon the close seed-coat (confirmed in the Japanese *Shortia uniflora*) and the campanulate corolla, with lobes undulate-crenate instead of fimbriate, and upon some characters in the stamens, all these taken from a rude figure in the Japanese *Soo Bokf.*, iv. fol. 8, which is supposed to represent *S. uniflora*, although the leaves would (as Maximowicz rightly observes) refer it rather to *S. galacifolia*, these being all represented as acute or in one dubious case subcordate at base, instead of reniform-cordate. The identification as to genus is doubtless correct; but the analysis of the flower is too rude for reliance as to all relating to the stamens and the squamulæ. Happily I can now give the characters from an actual blossom.

For I have now received, at first indirectly from Mr. J. W. Congdon,

and at length directly from Mr. M. E. Hyams, of Statesville, North Carolina, a flowering specimen of the long-sought *Shortia galacifolia*. Mr. Hyams, or more strictly his son, George McQueen Hyams, collected it on a hill-side in McDowell County, N. C., in the district I had indicated as the most probable locality, viz: east of the Black Mountain. It was collected in May, 1877, but, as its remarkable interest was unknown, it has only now been communicated to me. I will only state here, that the distinction between the two genera is probably definite, that our plant is perhaps identical in species with the one figured in the Japanese books (rather than with *S. uniflora*), although the corolla in ours is seemingly white, and the crenulation of the border of the lobes is stronger than in the description and often double; that the anther, though not agreeing with Maximowicz's character, probably may agree with this Japanese representative, and may be generically distinguished from that of *Schizocodon*, unless other species afford transitions; and that the squamulæ are like those of *Schizocodon* and fully as large, but broader, narrowed or almost unguiculate at base, and attached to the very base of the corolla, while the filaments (said by Maximowicz to be "libera" probably in the sense of free from the corolla, as they are represented in the Japanese figure) are adnate to the corolla for most of their length. That is, the phrase "filamentis tubo corollæ adnatis," in Benth. and Hook. Gen. Pl. is correct, but I know no then extant authority for it, except the analogy with its relatives. Less fortunate are the characters: "Antheræ erectæ, didymæ . . . loculis oblique dehiscentibus," derived by Maximowicz from the Japanese figures, and the "antheræ breves . . . loculis divergentibus" of the Genera Plantarum; the anthers being larger than in any other genus of the order, and the cells in a just sense longitudinally dehiscent. But the anther is—as in all its relatives except the anomalous Galax—inflexed or incumbent on the apex of the filament, in this genus about horizontal, as are consequently the marginal sutures which run the whole length of the elongated-oblong cells. The pollen is simple and obscurely trigonous as seen on the field of the microscope. The style and stigma are as in *Schizocodon*, but the latter more capitate.—A. G. *in Am. Jour. for December.*

PLANTAGO RUGELII.—In a letter from Dr. J. J. Davis, of Racine, Wisconsin, the following is of general interest: "I find that people who are in the habit of indulging in plantain "greens" have long known that there were two kinds; the one, *P. Rugelii*, toothsome; the

other, *P. major*, bitter and unpalatable. They distinguish *P. Rugelii* by a character I have not seen mentioned, viz: the petioles being purplish toward the base, a character that holds good so far as I have observed and one easily distinguished. That eminently practical botanist, the old cow, accepts *P. Rugelii* readily but rejects *P. major* after an olfactory test. It would seem that the reputed medicinal properties must reside in *P. major*, although both have been used indiscriminately, of course."

THE FLORA OF NORTHERN INDIANA.—Having been occupied mostly with the flora of that part of Indiana bordering upon the Ohio river, I had often looked longingly upon the map of the state at the northern tier of counties, bordering upon Michigan lake and state, and well filled with small lakes and tamarack swamps. It seemed as if some of our best plants must be found there, and in my preparation for publishing a catalogue of the flora of the state, I could find no report or no working botanist from that region. Last summer an opportunity presented itself of making a hasty survey for myself and the result was most encouraging. Although many very excellent species were obtained, the richest result to my mind was the fine prospect of good things that might reward a diligent search, rather than those that were actually obtained. Accompanied by my enthusiastic pupil and assistant, Mr. Chas. R. Barnes, I spent some three or four weeks along the line of the Lake Shore and Michigan Southern Railroad, which crosses the state exactly in the region I wished to traverse. The Kankakee river forms a natural boundary on the south side of the northwestern corner of this region, a slow, sluggish stream as it crosses Indiana, but rapid enough in Illinois. The consequence is that it has spread out on either side into a succession of extensive marshes, which render approach to the river well nigh impossible in many places. To the east lie the headwaters of the St. Joseph and Tippecanoe rivers, both of which are lost in an intricate system of small lakes, reminders of the time when one enormous lake covered it all. This is the lake region of the state, in no case extending farther south than the second tier of counties, and containing thousands of depressions, filled either with clear bodies of water or swamps. The time of our visit was rather unfortunate for the best results, too early for the best fall flowers and too late for the spring ones, and we had to note the former in bud and the latter in fruit, but we saw enough to know that the region was well worthy a thorough exploration at different seasons. The wildest, most unfre-

quented parts of it we did not even reach, as they were too inaccessible for our limited time, but what we heard of them made us expect great things.

We noticed five well defined classes into which it would be possible and convenient to divide the flora of this region.

I. First there is the flora of the sand hills and plains bordering upon Lake Michigan. The whole neighborhood of this lake appears strange to one who is not accustomed to the enormous deposits of sand resulting from the melting of the great glacier. This sand occurs in some places hundreds of feet thick, piled up into huge hills, swept out into steep valleys, so white that the reflection of the bright sunlight from it soon becomes painful, and so fine that it is the most fatiguing labor to walk in it. Clinging to this uncertain, shifting soil some plants find a precarious living. The sand hills seem perfectly bare except as they are covered here and there by clumps of shrubs and stunted growths of *Pinus Strobus*. The shrubs are *Ceanothus Americanus*, *Hamamelis Virginica*, *Rhus copallina*, *R. Toxicodendron*, *Quercus nigra* and a *Juniperus*. The first herb noticed and collected was *Campanula rotundifolia*, L., var. *linifolia*, Gr., with very rigid leaves and rooting deep into the sand. Then there were *Arabis lyrata*, *Tephrosia Virginiana*, *Krigia Virginica*, *Monarda punctata*, *Lithospermum hirtum*, and more abundant, *Saponaria officinalis*, *Lespedeza hirta*, *Œnothera biennis*, *Asclepias tuberosa*, *Euphorbia corollata*, etc. Among the sedges and grasses we found *Cyperus Schweinitzii*, *C. filiculmis*, *Carex Muhlenbergii*, *Poa compressa*, and *Kœleria cristata*. The only fern noted was *Pteris aquilina*. The flora of these sands is meager but well defined, for we found very few of the species mentioned in other localities. Of course it is not meant that they are all only found upon sand hills, for some of them we have collected in Southern Indiana, but such seemed to be their habit in this region.

II. The second division is the flora of the wet grassy meadows and choked up swamps. Such regions we always found a short distance from the lakes, evidently former prolongations of their beds. We studied them principally a few miles south of Otis, and south of Laporte, which lies upon a cluster of beautiful lakes. The only shrubs we noticed in the conditions just described were *Rhus glabra*, *Spiræa salicifolia*, *Rosa blanda*, *Ribes rubrum*, *Cephalanthus occidentalis*, *Viburnum prunifolium*, and *Salix humilis*. Among the herbaceous phænogams were *Elodes Virginica*, *Epilobium coloratum*, *E. palustre*, var. *lineare*, *Lythrum alatum*, *Cicuta bulbifera*, *Sium lineare*, *Coreopsis trichosperma*, with leaves so slender that they resemble those of *C. verti-*

cillata, Cacalia tuberosa, Campanula aparinoides, Scutellaria galericulata, Typha latifolia, Sparganium eurycarpum, Alisma Plantago, Asclepias incarnata, Saururus cernuus, etc. Of other families we found *Eleocharis palustris, Eriophorum Virginicum, Rhynchospora alba, R. glomerata, Carex scoparia, Zizania aquatica, Spartina cynosuroides, Bromus ciliatus, Osmunda regalis* and *Woodwardia Virginica.* Of *Epilobium palustre* we noticed two forms that seemed constant and easily distinguished. In the first the flowers were smaller, always white; the leaves very much crowded, narrowly linear, 1½–2 inches long, 1 line wide; the whole upper part of the plant whitened. In the second the flowers were larger, pink or rose-color; leaves 1–1¼ inches long, 2–3 lines wide. Of course the differences are only such as may occur in all species, but both forms are certainly necessary to make a complete specimen. The differences seem to become less when we come to analyze them and subject them to measurement, but there is an indescribable something that always enables us to distinguish them at a glance.

III. The flora of the lakes proper. To one who has never botanized upon small lakes there is something very fascinating in his first ride in a "dug-out," coasting along reedy banks and among floating leaves, crowding through choked channels where every dip of the oar brings up dense masses of underwater vegetation. Such trips can be best taken at Laporte, where boats can be had at any time and where the lakes are full of plants. Probably the most noticeable growth there is *Pontederia cordata* with its tall spikes of violet-blue flowers rising in endless succession along all the shores. Then there is an abundance of *Nuphar advena* and *Nymphæa odorata,* though we searched our Nymphæas in vain for any fragrance. They were as scentless as could be. We peered anxiously for tubers, but no tubers could we find, and it had to stand as *N. odorata.* Then there was *Brasenia peltata, Sagittaria graminea* with leaves varying from ovate-lanceolate to filiform, *Ranunculus aquatilis,* var. *stagnatilis, Schollera graminea, Potamogeton compressus, Anacharis Canadensis, Myriophyllum spicatum, Utricularia vulgaris,* etc. Along the low sandy shores we picked up *Hypericum Canadense,* var. *major, Hydrocotyle umbellata, Stachys hyssopifolia, Juncus pelocarpus, J. acuminatus, Dulichium spathaceum, Scirpus Smithii, Eleocharis acicularis,* etc. Up to these lakes formerly extended the growth of the prairies that lie farther south and it is still found in old neglected fields and along the lines of railroads, but the rest has so long been under cultivation that the indigenous flora has disappeared. Hence any mention of the numerous prairie forms

we found in the conditions just indicated will be made under the head of prairie flora.

IV. The flora of the tamarack and sphagnous swamps These swamps are found along the Kankakee. but chiefly in north-eastern Indiana. The one we examined was near Kendallville, on the L. S. & M. S. R. R. If one is delighted with his first botanical trip upon a lake, he can scarcely be less so with his first experience in a tamarack swamp, with the dark branches of *Larix* above his head and a soft cushion of *Sphagnum* under his feet. It is in such places that I think we will find our rarest forms and I regretted exceedingly that our visit lasted but one day. We noticed that three species of moss chiefly formed the covering of the ground, viz: *Sphagnum squarrosum, S. cuspidatum* and *Leucobryum glaucum.* Growing abundantly upon these moss banks was *Drosera rotundifolia*, and each gland upon the delicate leaves had exuded a clear drop of fluid that glittered like a dew-drop, showing how beautifully appropriate is the name "sundew." Then there was *Sarracenia purpurea, Elodes Virginica, Campanula aparinoides, Calopogon pulchellus, Cypripedium pubescens, C. acaule, Smilacina bifolia, Osmunda regalis*, etc. We found several bushes of *Betula pumila* which seem to be intermediate between *B. pumila* and *B. glandulosa.* The leaves are glandular dotted and there are many resinous, wart like glands upon the glabrous branchlets; but the bushes were 6 or 8 feet high and the leaves pale beneath with finely reticulated veinlets. Around the edges of the swamp, in wet ground, but before the tamarack begins, we noted *Clematis Virginiana, Potentilla fruticosa, Cornus stolonifera, Aster longifolius, Cnicus muticus, C. discolor, Lobelia Kalmii, Salix candida, Scirpus validus, Carex comosa, C. flava*, etc.

V. The prairie flora. The prairie of Indiana is found in a tier of counties farther south and the flora is as well defined as that of the lakes. Here thrive principally the large and coarse *Compositæ* and some peculiar *Leguminosæ.* To tell of all the plants we found either upon the prairies or that had extended from them along the railroads, would take up too much space and I can mention only the best marked. There were *Linum sulcatum, Petalostemon violaceus, P. candidus, Amorpha canescens, Gaura biennis, Eryngium yuccæfolium, Liatris scariosa, L. spicata, L. cylindracea, L. pycnostachya, Solidago stricta, S. rigida, S. Missouriensis, S. gigantea, Silphium laciniatum, S. terebinthinaceum, S. integrifolium, Parthenium integrifolium, Rudbeckia subtomentosa, Lepachys pinnata, Helianthus lætiflorus, H. occidentalis, H. mollis, H. giganteus, H. grosse-serratus, H. divaricatus, H. hirsutus, Co-*

reopsis palmata, Cacalia tuberosa, Verbena stricta, Asclepias verticillata, Acerates longifolia, A. viridiflora, Juncus nodosus, var. *megacephalus,* etc.

Some good species have been omitted as belonging strictly to none of the divisions made but rather a mixture of all and brought together by artificial conditions, as along the railroads. For instance, between Laporte and South Bend we found, in addition to very many of the species just mentioned as belonging to the prairie region, *Anemone cylindrica, Helianthemum Canadense, Lechea major, Polygala polygama, Lupinus perennis, Astragalus Canadensis, Potentilla argentea, Vaccinium Pennsylvanicum, Seymeria macrophylla, Gerardia flava* (with leaves in every case decidedly acute), *G. pedicularia, Ruellia ciliosa, Apocynum androsæmifolium, Habenaria virescens, H. ciliaris, Tofieldia glutinosa, Allium cernuum,* etc. In a ditch were collected *Lemna polyrrhiza* and both species of *Wolffia.*

In the streets of Goshen we found *Borrago officinalis,* L., looking as though it had taken up its abode permanently, though of course we could not tell. There was an old garden near by from which it had undoubtedly escaped but probably was not established sufficiently to entitle it to a place in our flora.

In conclusion, I would request that all botanists of Indiana, or those who have worked in Indiana, communicate with me in regard to the catalogue of the state flora, that it may be made as full and complete as possible upon the first issue.—J. M. C.

Potato Pierced by Grass.—A case of this is given in the Gazette for December. The past season I found two tubers in one hill pierced by stems of *Poa pratensis.* I mention this because some people still doubt that such a thing can take place. I have no doubt quick-grass is often carried from one farm to another where it has grown into potatoes. The growing point of the stems of quick-grass and June-grass are quite sharp and stout.—W. J. Beal, *Lansing, Mich.*

The Botrychia not Ferns.—In nearly all the botanies now in use, the species of *Botrychium* and *Ophioglossum* will be found included among the Ferns, arranged either at the commencement or close of that family under the head, Sub-order *Ophioglossaceæ.* Hooker, in his "Synopsis Filicum," makes the same arrangement although in "Species Filicum," published previously, he omits them altogether, as not coming within the province of that work. Until very recently, but little was to be found written upon these interesting plants on this side of the water, and even the descriptions in the American

botanies are very meager, and do not always include the full number of species to be found within the limits of the territory which these works are intended to include.

Of the nine species of *Botrychium*, acknowledged by Milde in his monograph of the genus, we are fortunate in being able to find six (possibly seven) in this country. Within a year, "Botrychium simplex" and "Vernation in Botrychiums," by Geo. E. Davenport, and description of most of the species of *Botrychium* in the "Ferns of North America," by Prof. D. C. Eaton, have made their appearance, adding much of value to the literature of the subject as far as the American species are concerned. Yet we are still obliged to seek among foreign authors information concerning their structure, the position of the *Ophioglossacæ* in the vegetable kingdom, and their relations to other nearly allied plants.

In Sachs's "Text Book of Botany" are to be found the results of the later investigations regarding the structure, mode of growth, and method of reproduction of the class *Ophioglossaceæ*, which includes three genera only, viz: *Ophioglossum, Helminthostachys* and *Botrychium*. If we examine any of the native species of *Botrychium* when they are first developing their fronds, we shall find at the outset that, unlike the Ferns, which are circinate in their mode of vernation, the *Botrychia* develop their fronds from the ground in an erect position, and if the base of the plant is examined under the microscope, the buds for several succeeding years will be found one below another, still in an erect position, the rudimentary sterile and fertile fronds in the most highly developed buds clasping each other. This mode of growth is the same with all the plants of the class *Ophioglossaceæ*.

As far as is now known, the growth of the prothallus from the spore takes place under the ground; at least this is the case with those plants in this class of which the prothallus has been observed. The prothallus is very small, not over 2 mm. in diameter, has but few root hairs, and is destitute of chlorophyll; while with the true Ferns the prothallus is often 6 or 7 mm. in diameter, has a profusion of root hairs, contains much chlorophyll, and develops above the ground. In fact the Ferns have a much greater thalloid exhistance in every way than the *Ophioglossaceæ*. The spores of the Ferns are in cases, which are developed from the outer layer of cells of the frond, and are therefore to be considered as trichomes. The spores of the *Ophioglossaceæ*, on the contrary, are derived from the inner tissue of the fertile spike or frond which bears them, and therefore cannot be referred to trichomes, but, as Sachs suggests, more strongly resembles the produc-

tion of pollen in the anthers of flowering plants. These very important differences between the Ferns and the *Ophioglossaceæ*, require us to place them in separate classes of equivalent value.

As the *Equisetaceæ* are in some respects more highly differentiated than the Ferns, they must therefore be placed in advance of them in the system of classification; yet both the Ferns and Equisetums have an extensive thalloid exhistance, and therefore must be placed below the *Ophioglossaceæ*, which in turn having only one sort of spores, as have also the Ferns and Equisetums, must remain with them in the isosporous division of vascular cryptogams, in position nearest the heterosporous division, where male and female prothalli are developed from different spores of the same plant, and thus suggest the stamens and pistils of flowering plants.

It is not intended to offer here anything more than a mere suggestion as to the position occupied by the *Botrychia* (*Ophioglossaceæ*) in a general classification; but as the interest increases in the collection of our American species, it will be inquired, where information can be obtained regarding them.

It should be known more generally by collectors that *Ophioglossum* and *Botrychium* are not true ferns, and that they should be looked upon rather as fern allies, for they differ from the Ferns more than the Equisetums, and as much as most Lycopods.—JOHN ROBINSON. [*Science News*, *Dec. 15*.]

A REPLY.—We are exceedingly sorry if the pages of the GAZETTE have been the means of causing hard feeling between some of our Iowa botanists. In the September number we published a communication from Mr. J. C. Arthur, author of the Catalogue of the Iowa Flora, in which he replied to certain statements that had been published in reference to his Catalogue. We have a reply from the Rev. Rob't Burgess claiming that we have not treated him fairly in not publishing some of his communications in which he had corrected the mistakes that had been made. Of course, if we have thus failed to do Mr. Burgess justice, we are ready to right it as far as we can, and for this purpose we publish some of the statements of his letter.

"A criticism upon my Botanical Reports, in the September GAZETTE, calls for a brief reply. The writer charges to my account two articles in the GAZETTE and *Bulletin*, for the publication of which I am not responsible. Mr. Arthur, ignorant of the fact that I had sent a correct report to the GAZETTE (unpublished) to rectify and replace them, says that "barely 1-5 of all my analyses were correct." [This is a

mistake, as there is no such statement in the article referred to. Mr. Arthur says that "over a fifth were incorrectly named."—EDS.] I printed three reports, 75 plants in all, in which I admit 5 false analyses, with a few doubtful." We readily concede that the fault is all our own in ever having admitted for publication species that were doubtful and hence we are ready to receive all the fulminations of the parties and will trouble the readers of the GAZETTE with no more of it.—EDS.

FERNS OF NORTH AMERICA, Parts 10 and 11.—This work continues of the same excellence and when completed will give us as beautiful and elaborate a monograph upon our Ferns as we could desire. As a general rule the figures are all excellent, so that even an ordinary observer would be able to recognize and determine almost any fern he would find. The present parts contain *Osmunda regalis*, L., *O. Claytoniana*, L., *O. cinnamomea*, L., *Aspidium Thelypteris*, Swartz, *Polypodium vulgare*, L., *P. Californicum*, Kaulf., *Scolopendrium vulgare*, Smith, and *Lomaria Spicant*, Desvaux. All the figures impress us more favorably than that of *Osmunda regalis*. It is unlike any form of that species that grows here and we were compelled to read the name before knowing what it was. Our royal fern should make a more impressive picture. Besides there is not that sharpness and distinctness of outline that marks most of the other figures, as *Aspidium Thelypteris* for instance, or the two species of *Polypodium*

NOTE.—For the fantastic mistakes that appeared in the December number of the GAZETTE, our readers will please not hold us responsible. They were due to the conceit of a printer, whose knowledge of botany is somewhat limited.

WE would call attention to the advertisement of H. Eggert, Esq., of St. Louis, Mo. The plants he offers for sale are remarkably cheap, but that does not imply that they are remarkably poor. Many of the species are exceedingly rare and the specimens are complete and fine, among the very best we have ever received. When a botanist can select fine specimens of his desiderata for four cents a species, he had better avail himself of the offer. Mr. Eggert has an abundance of plants and will send a list of them to any one upon application.

WE begin to publish in the next number a very interesting series of papers from Mr. A. H. Curtiss upon the flora of the shell islands of the Florida coast.